



Information and Technology for Better Decision Making

2008 Post-Election Voting Survey of Local Election Officials

Statistical Methodology Report

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**2008 POST-ELECTION VOTING SURVEY OF
LOCAL ELECTION OFFICIALS:
STATISTICAL METHODOLOGY REPORT**

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Policy officials contributing to the development of this survey include Erin St. Pierre and Scott Wiedmann (Federal Voting Assistance Program).

DMDC's Program Evaluation Branch, under the guidance of Brian Lappin, former Branch Chief, and Kristin Williams, current Branch Chief, is responsible for the development of questionnaires. Lead analyst was Robert Tinney.

DMDC's Personnel Survey Branch, under the guidance of Jean Fowler, former Branch Chief, and David McGrath, current Branch Chief, is responsible for HRSAP survey sampling, weighting, database construction, and archiving. Lead operation analyst on this survey was Lisa Howard Davis, SRA International, Inc., supported by John Freimuth, Consortium Research Fellow. The lead statistician on this survey was Mark Gorsak, supported by Katrina Hsen, Consortium Research Fellow. Jean Fowler performed the sampling procedures.

DMDC's Survey Technology Branch, under the guidance of Fred Licari, Branch Chief, is responsible for the distribution of datasets outside of DMDC and maintaining records on compliance with the Privacy Act and 32 CFR 219.

2008 POST-ELECTION VOTING SURVEY OF LOCAL ELECTION OFFICIALS

Executive Summary

The Uniformed and Overseas Citizens Absentee Voting Act of 1986 (UOCAVA), 42 USC 1973ff, permits members of the Uniformed Services and Merchant Marine, and their eligible family members and all citizens residing outside the United States who are absent from the United States and its territories to vote in the general election for federal offices. These groups include:

- Members of the Uniformed Services (including Army, Navy, Air Force, Marine Corps, Coast Guard)
- U.S. citizens employed by the federal Government residing outside the U.S., and
- All other private U.S. citizens residing outside the U.S.

The Federal Voting Assistance Program (FVAP), under the guidance of USD(P&R), is charged with implementing the UOCAVA and evaluating the effectiveness of its programs. The FVAP Office asked DMDC to design, administer, and analyze post-election surveys on Uniformed Services voter participation, overseas nonmilitary voter participation, and local election officials. Without such surveys, the Department will not be able to assess and improve voter access. In addition, such surveys fulfill 1988 Executive Order 12642 that names the Secretary of Defense as the “Presidential designee” for administering the UOCAVA and requires surveys to evaluate the effectiveness of the program in presidential election years.

The objectives of the 2008 post-election surveys are: (1) to gauge participation in the electoral process by citizens covered by UOCAVA, (2) to assess the impact of the FVAP’s efforts to simplify and ease the process of voting absentee, (3) to evaluate other progress made to facilitate voting participation, and (4) to identify any remaining obstacles to voting by these citizens. Surveys were done of military members, federal civilian employees overseas, other U.S. citizens overseas, voting assistance personnel, and local election officials in the U.S.

This report focuses on the *2008 Post-Election Voting Survey of Local Election Officials (2008 LEO)*, which was designed to capture the attitudes and behaviors from the local election officials as well as voting information with the voting jurisdiction, concentrating on the absentee vote.

This report describes the sampling and weighting methodologies used in the *2008 LEO*. Calculation of response rates is described in the final section.

The population of interest for the *2008 LEO* consisted of the local election officials from the voting jurisdictions in the United States and the four territories. There were 7,886 voting jurisdictions covering the United States and the four territories.

The 2008 *LEO* survey was a sample of voting jurisdictions with the LEO as the respondent. The total size was 2,598. The survey administration period lasted from November 5, 2008 to January 7, 2009. There were 1,376 usable questionnaires.

After the determination of eligibility for the survey and completion of a survey, analytic weights were created to account for varying response rates among population subgroups. First, the sampling weights (the inverse of the selection probabilities) were computed. Second, the base weights were adjusted to account for survey nonresponse.

Location, completion, and response rates are provided in the final section of this report for both the full sample and for population subgroups. These rates were computed according to the recommendations of the Council of American Survey Research Organizations (1982). The location, completion, and response rates were 81%, 68%, and 55%.

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2008 POST-ELECTION VOTING SURVEY OF LOCAL ELECTION OFFICIALS: STATISTICAL METHODOLOGY REPORT

Introduction

The Uniformed and Overseas Citizens Absentee Voting Act of 1986 (UOCAVA), 42 USC 1973ff, permits members of the Uniformed Services and Merchant Marine, and their eligible family members and all citizens residing outside the United States who are absent from the United States and its territories to vote in the general election for federal offices. These groups include:

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This report describes sampling and weighting methodologies for the 2008 *LEO*. The first section describes the design and selection of the sample. The second section describes the survey administration. The third section describes weighting and variance estimation. The final section describes the calculation of response rates, location rates, and completion rates for the full sample and for population subgroups. Tabulated results of the survey are reported by DMDC (2009).

Sample Design and Selection

Target Population

The 2008 LEO was designed to represent all local election officials from the voting jurisdictions in the United States and the four territories. The 2004 survey sampled about 1,000 local election officials compared with 2,598 for the 2008 survey.

Sampling Frame

The sampling frame was built from two sources. A file from the Election Administration database from the Election Data Services, Inc (EDS) was initially used to develop the frame. The EDS file contained 10,729 voting jurisdiction records. There were duplicate records for many voting jurisdictions within the EDS file. After removing the duplicate records, there were 10,051 voting jurisdiction level records.

After contacting a sample of jurisdictions, modifications to the frame were needed due to the following:

- Minnesota has county level voting jurisdictions. Jurisdictions at a geographic level below the county did not process the voting information needed for the survey. The initial EDS frame had county and sub-county voting jurisdictions for Minnesota.
- Wisconsin and Michigan have municipality and city-level voting jurisdictions. Jurisdictions at the county level did not process the voting information needed for the survey. The initial EDS frame had county and sub-county voting jurisdictions for Wisconsin and Michigan.
- Kalawao County, Hawaii uses the governmental services from Maui County for voting purposes.
- Ferdinand, Vermont is an unincorporated town that does not have governmental voting services.
- West Windsor, Vermont was a duplicate not originally removed from the frame file.

Kalawao County, Hawaii; Ferdinand, Vermont; and one record from West Windsor, Vermont became ineligible for the frame. All the counties (87) and sub-counties (373) in Minnesota were included in the original frame. However, all jurisdictions below the county level in Minnesota were removed from the frame, and the base weights were adjusted according to the sampling stratum. There were 373 city and township level jurisdictions removed from the frame in Minnesota. All the county level jurisdictions in Wisconsin and Michigan were removed from the frame and the base weights were adjusted according to the sampling stratum. For Wisconsin and Michigan, the frame did not contain all jurisdictions at or below the county level. There were 41 counties removed from Wisconsin and 54 counties removed from Michigan. To add jurisdictions below the county level, listings from the National Association of Counties (NACo) were used. The NACo listing includes the cities, towns, villages, and boroughs as per the Census

Bureau definition. An additional nine voting jurisdictions were added to the sample for Wisconsin and 51 voting jurisdictions were added to the sample for Michigan.

The final sampling frame size was 7,886 voting jurisdictions. The register voter counts were from the EDS Election Administration database. Table 1 shows the total number of voting jurisdictions and registered voters by sampling stratum.

Table 1.
Total Voting Jurisdictions and Register Voter Counts by Sampling Stratum

Sampling Stratum	Jurisdiction Count	Registered Voter Count
Total jurisdictions	7,886	187,857,248
Any jurisdiction with 200,001–360,000 registered voters ^a	101	25,838,816
Any jurisdiction with more than 360,000 registered voters	79	64,109,108
County/City jurisdictions with registered voters		
100,001–200,000.....	146	20,078,655
75,001–100,000.....	109	8,968,523
40,001–75,000.....	279	14,357,107
10,001–40,000.....	1,263	22,967,130
5,001–10,000.....	624	3,925,735
Less than 5,001.....	791	1,365,417
Town/Township/Village jurisdictions with registered voters		
10,001–200,000.....	331	17,695,367
5,001–10,000.....	302	2,987,674
Less than 5,001.....	3,861	5,563,716

^a This stratum also contains the largest jurisdiction for states or territories with only jurisdictions less than 200,001 registered voters.

Sample Design

The 2008 LEO used a single-stage stratified design. The two strata with jurisdictions with more than 200,000 registered voters were included in the sample with certainty. For states or territories with only jurisdictions less than 200,001 registered voters, the largest jurisdiction from that state or territory was included in the sample with certainty. So, the sample included at least one jurisdiction from the 50 states, the District of Columbia, and the four territories.

Within each remaining stratum, voting jurisdictions were selected with equal probability without replacement using simple random sampling. Since the allocation of the sample was not proportional to the size of strata, selection probabilities varied among strata, and jurisdictions were not selected with equal probability overall. Nonproportional allocation was used to achieve

adequate sample sizes for relatively small subpopulations of analytic interest. The primary domain of interest is jurisdiction size by type of jurisdiction.

Table 2.
Sample Counts and Probability of Selection for Voting Jurisdictions by Sampling Stratum

Sampling Stratum	Sample Count	Probability of Selection
Total jurisdictions	2,598	n/a
Any jurisdiction with 200,001–360,000 registered voters ^a	101	1.00
Any jurisdiction with more than 360,000 registered voters	79	1.00
County/City jurisdictions with registered voters		
100,001–200,000.....	120	0.82
75,001–100,000.....	77	0.71
40,001–75,000.....	194	0.70
10,001–40,000.....	702	0.56
5,001–10,000.....	336	0.54
Less than 5,001.....	335	0.42
Town/Township/Village jurisdictions with registered voters		
10,001–200,000.....	72	0.22
5,001–10,000.....	64	0.21
Less than 5,001.....	518	0.13

^aThis stratum also contains the largest jurisdiction for states or territories with only jurisdictions less than 200,001 registered voters.

Survey Allocation

The allocation was in proportion to the number of registered voters. A higher percentage of voting jurisdictions in the sampling strata with more register voter population was allocated more sample than voting jurisdictions with less registered voter population. Table 2 shows the probabilities of selection for each sampling stratum.

Sample Selection

Initially, the frame was stratified by the sampling stratum and separate simple random samples were drawn within each sampling stratum. The initial sample was notified about the survey. From that contact, modifications to the frame were needed. After correcting the frame to account for the missing jurisdictions below the county level for Wisconsin and Michigan, an additional sample was selected using a simple random sample. The additional sample was drawn from the population of missing jurisdictions in Wisconsin and Michigan.

After the removal of county level voting jurisdictions in Wisconsin and Michigan and the voting jurisdictions below the county level for Minnesota, the requirement to include the largest voting jurisdiction in each state did not exist for Wisconsin. As a result, the city of Milwaukee

was included in sample with certainty. The number of registered voters on the EDS Election Administration database for the city of Milwaukee was 172,676. Detroit, Michigan and Hennepin County, Minnesota were already in the sample with certainty. The number of registered voters was 639,053 and 703,453 for Detroit and Hennepin County, respectively. No adjustment was necessary for Michigan or Minnesota to satisfy the requirement for the largest voting jurisdiction in each state.

Table 3.
Initial and Final Sample Counts by Sampling Stratum

Sampling Stratum	Initial Sample Count	Final Sample Count
Total jurisdictions	3,004	2,598
Any jurisdiction with 200,001–360,000 registered voters ^a	115	101
Any jurisdiction with more than 360,000 registered voters	85	79
County/City jurisdictions with registered voters		
100,001–200,000.....	131	120
75,001–100,000.....	81	77
40,001–75,000.....	212	194
10,001–40,000.....	726	702
5,001–10,000.....	338	336
Less than 5,001.....	291	335
Town/Township/Village jurisdictions with registered voters		
10,001–200,000.....	74	72
5,001–10,000.....	77	64
Less than 5,001.....	874	518

^a This stratum also contains the largest jurisdiction for states or territories with only jurisdictions less than 200,001 registered voters.

Survey Administration

Sample Contact Information

The sample contact information was from the Election Administration database from the EDS. The initial sample was notified using the contact information from EDS.

After modifications to the frame, additional contact information was needed for the voting jurisdictions added to the sample. A Web search for contact information about the local election officials in Wisconsin and Michigan was done. There was a phone follow-up to confirm that the contact information was correct.

Survey Administration

Survey pre-administration activities began on April 17, 2008, with an additional mailing on July 28, for the survey administration of the *2008 LEO*, beginning on November 5, 2008, and continuing through January 7, 2009. The survey was administered in mixed modes—in both Web and paper formats. Please see DMDC (In preparation) for further information on survey administration.

The actual administration plan called for three types of communications with sampled local election officials: notification, survey invitation, and thank you/reminder.

The first communication was a notification of the sampled jurisdictions that they would be surveyed at the time of the November general election. The jurisdictions were provided a spreadsheet (both paper and an Excel file) that could be used to track numbers during the year that would be needed for the survey. It was during this pre-administration process that the frame and sample were cleaned, as described above.

The second communication, the “survey invitation,” would contain the paper survey for postal recipients or a link to the survey for Web recipients. There was also a statement in the cover letter that the *2008 LEO* survey was different from the Election Day survey conducted by the United States Elections Assistance Commission.

Finally, the third type of communication would be a “thank you/reminder.” After a specified period following survey invitation/distribution, the “thank you/reminder” would be sent. The main purpose of this communication was to remind sampled individuals of the survey and ask them to please complete and return the survey.

Web Survey Administration

Survey invitation and thank you/reminder e-mails were sent to the survey sample with known email addresses provided during the sample verification process. The e-mail contact was under the signature of Polli Brunelli, Director of the Federal Voting Assistance Program (FVAP). Table 4 shows the dates for the e-mail distribution.

Table 4.
E-Mail Distribution to Local Election Officials

Type of E-Mail	Date
Survey Invitation	11/5/08
Thank you/reminder:	
First	11/14/08
Second	11/28/08
Third	12/12/08

All e-mail notifications included the link to the survey Web site and a unique Ticket Number for logging on to the survey. Thank you/reminders were sent to all sample members excluding the following:

- Those who had submitted a Web survey or returned a paper survey;
- Those who had requested a paper survey; and
- Those who had been assigned a case disposition code indicating a refusal or survey ineligibility (e.g., a disposition code for deceased or no longer employed with the agency).

Mail Survey Administration

The paper survey was formatted and prepared for printing. A unique Ticket Number and the URL for accessing the Web version of the survey were included on the cover of the paper survey. Instructions were included stating that sample members had the option of completing either the Web or paper versions of the survey.

Printed survey materials were assembled into survey packets. Each packet included a survey cover letter (under the signature of Polli Brunelli, Director of FVAP), the survey, an envelope to return the survey, and an outer mailing envelope.

Survey Administration Issues

Selection for Multiple Election Surveys

During the administration of the 2008 LEO survey, local election officials received requests of information from other organizations. There were questions about the 2008 LEO survey made to the FVAP toll-free number and the FVAP Web site address.

Local Election Officials Not in Sample

Some local election officials not in the 2008 LEO sample received word about the survey. These LEOs inquired through the FVAP toll-free number and the FVAP Web site address if they could participate in the survey. The LEOs were notified that the 2008 LEO was a scientific sample representing the United States and that their participation was not needed for the survey.

Weighting

The analytic weights for the 2008 LEO were created to allow the estimation of population values by eligible survey respondents. To facilitate this representation, weights were created that reflected the differential survey sampling rates in the 11 population subgroups shown in tables 2 and 3 and the differential rates of response in each of these subgroups.

Case Dispositions

Final case dispositions for weighting were determined using information from field operations (the Survey Control System, or SCS), and returned surveys. No single source of information is both complete and correct; inconsistencies among these sources were resolved according to the order of precedence shown in Table 5. Execution of the weighting process and computation of response rates both depend on this classification.

Table 5.
Case Disposition Resolutions

Case Disposition	Information Source	Conditions
Frame ineligible	SCS	Ineligible
Eligible, complete response	Item response rate	Item response is at least 50%.
Eligible, incomplete response	Item response rate	Return is not blank but item response is less than 50%.
Active refusal	SCS	Reason for refusal is “any;” ineligible reason is “other;” reason survey is blank is “refused-too long,” “ineligible-other,” “unreachable at this address,” “refused by current resident,” or “concerned about security/confidentiality.”
Blank return	SCS	No reason given.
PND	SCS	Postal non-delivery or original non-locatable.
Nonrespondent	Remainder	Remainder

This order is critical to resolving case dispositions. For example, suppose a sample person refused the survey, with the reason that it was too long; in the absence of any other information, the disposition would be “eligible nonrespondent.” If the SCS indicated that the survey was from an ineligible jurisdiction, the disposition would be “ineligible.”

Final case dispositions for the 2008 LEO are shown in Table 6. The total number of eligible cases for weighting is shown in Table 7.

Table 6.
Sample Size by Case Disposition Categories

Case Disposition Category and (Code Value)	Sample Size
Total	2,598
Record Ineligible (1)	3
Eligible Response	
Complete (4)	1,376
Incomplete (5)	136
Refused/Other (8)	117
Blank (9)	3
Postal Non-Delivery (10)	397
Non-respondents (11)	566

Table 7.
Complete Eligible Cases by Sampling Stratum

Sampling Stratum	Complete Eligible Cases
Total jurisdictions	1,376
Any jurisdiction with 200,001–360,000 registered voters ^a	50
Any jurisdiction with more than 360,000 registered voters	34
County/City jurisdictions with registered voters	
100,001–200,000.....	59
75,001–100,000.....	37
40,001–75,000.....	95
10,001–40,000.....	364
5,001–10,000.....	174
Less than 5,001.....	194
Town/Township/Village jurisdictions with registered voters	
10,001–200,000.....	37
5,001–10,000.....	34
Less than 5,001.....	298

^a This stratum also contains the largest jurisdiction for states or territories with only jurisdictions less than 200,001 registered voters.

Base Weight

The 2008 LEO sample was a stratified random sample where separate samples were selected from each of the 11 frame strata (Table 1). Within each stratum, a simple random sample was drawn (Table 3). The base or sampling weight is the ratio of the frame count to the sample count for each stratum. Table 8 shows the base weights for each stratum.

Table 8.
Base Weights by Sampling Stratum

Sampling Stratum	Base Weight
Four territories	1.00
Any jurisdiction with less than 250,000 registered voters ^a	1.00
Any jurisdiction with 250,001–360,000 registered voters	1.00
Any jurisdiction with 360,001–1,000,000 registered voters	1.00
Any jurisdiction with more than 1,000,000 registered voters	1.00
County/City jurisdictions with registered voters	
100,001–200,000.....	1.22
75,001–100,000.....	1.42
40,001–75,000.....	1.43
10,001–40,000.....	1.80
5,001–10,000.....	1.85
Less than 5,001.....	2.37
Town/Township/Village jurisdictions with registered voters	
10,001–200,000.....	4.60
5,001–10,000.....	4.72
Less than 5,001.....	7.48

^a This stratum also contains the largest jurisdiction for states or territories with only jurisdictions less than 200,001 registered voters.

Adjustments to Base Weights

After case dispositions were resolved, the sampling weights were adjusted for nonresponse. The eligibility-adjusted weights for eligible respondents (value 4) were adjusted to account for eligible sample members who had not returned a completed survey (value 5).

Nonresponse Adjustments and Final Weight

Once base weights were adjusted, final weights were calculated by dividing the sum of base weights allocated to eligible respondents by the count of eligible respondents in each stratum. Final weights greater than zero were assigned to all eligible cases that had completed responses.

The four territories were in sample with certainty and assigned to the sampling stratum for any jurisdiction with 200,001–360,000 registered voters. To calculate an estimated number of votes comparable to the general population, the territories were weighted separately from the jurisdictions within the United States. Two of the four territories responded. Weighting for the certainty strata used cutoffs of a quarter million, 360,000, and one million registered voters. The final weight is 2.00. Table 9 shows the final weights by sampling stratum.

Table 9.
Final Weights by Sampling Stratum

Sampling Stratum	Final Weight
Four territories	2.00
Any jurisdiction with less than 250,000 registered voters ^a	2.20
Any jurisdiction with 250,001–360,000 registered voters	1.89
Any jurisdiction with 360,001–1,000,000 registered voters	2.29
Any jurisdiction with more than 1,000,000 registered voters	2.50
County/City jurisdictions with registered voters	
100,001–200,000.....	2.47
75,001–100,000.....	2.95
40,001–75,000.....	2.94
10,001–40,000.....	3.47
5,001–10,000.....	3.59
Less than 5,001.....	4.07
Town/Township/Village jurisdictions with registered voters	
10,001–200,000.....	8.95
5,001–10,000.....	8.88
Less than 5,001.....	12.96

^aThis stratum also contains the largest jurisdiction for states or territories with only jurisdictions less than 200,001 registered voters.

Variance Estimation

Analysis of the 2008 LEO data requires a variance estimation procedure that accounts for the complex sample design. The final step of the weighting process was to define strata for variance estimation by Taylor series linearization. The 2008 LEO variance estimation strata correspond to the sampling strata shown in Table 7. Eleven variance estimation strata were defined for the 2008 LEO.

Location, Completion, and Response Rates

Location, completion, and response rates were calculated in accordance with guidelines established by The Council of American Survey Research Organizations (CASRO). The procedure is based on recommendations for Sample Type II response rates (Council of American

Survey Research Organizations, 1982). This definition corresponds to The American Association for Public Opinion Research (AAPOR) RR3 (AAPOR, 2000), which estimates the proportion of eligible cases among cases of unknown eligibility.

Location, completion, and response rates were computed for the 2008 LEO as follows:

The location rate (LR) is defined as

$$LR = \frac{\text{adjusted located sample}}{\text{adjusted eligible sample}} = \frac{N_L}{N_E}.$$

The completion rate (CR) is defined as

$$CR = \frac{\text{usable responses}}{\text{adjusted located sample}} = \frac{N_R}{N_L}.$$

The response rate (RR) is defined as

$$RR = \frac{\text{usable responses}}{\text{adjusted eligible sample}} = \frac{N_R}{N_E}.$$

where

- N_L = Adjusted located sample
- N_E = Adjusted eligible sample
- N_R = Usable responses.

To identify the cases that contribute to the components of LR, CR, and RR, the disposition codes were grouped as shown in Table 10.

Table 10.
Disposition Codes for CASRO Response Rates

Case Disposition Category	Code Value ^a
Eligible Sample	4, 5, 8, 9, 10, 11
Located Sample	4, 5, 8, 9, 11
Eligible Response	4
No Return	11
Eligibility Determined	2, 3, 4, 5, 8, 9
Self Report Ineligible ^b	2, 3

^a Code values are from table 6.

^b There were no self report ineligibles for the survey.

Ineligibility Rate

The ineligibility rate (IR) is defined as

$$IR = \frac{\text{self report ineligible cases}}{\text{eligible determined cases}}.$$

Estimated Ineligible Postal Non-Deliverable/Not Located Rate

The estimated ineligible postal non-deliverable/not located rate (IPNDR) is defined as

$$IPNDR = (\text{Eligible Sample} - \text{Located Sample}) * IR.$$

Estimated Ineligible Nonresponse

The estimated ineligible nonresponse (EINR) is defined as

$$EINR = (\text{Not returned}) * IR.$$

Adjusted Location Rate

The adjusted location rate (ALR) is defined as

$$ALR = \frac{(\text{Located Sample} - EINR)}{(\text{Eligible Sample} - IPNDR - EINR)}.$$

Adjusted Completion Rate

The adjusted completion rate (ACR) is defined as

$$ACR = \frac{(\text{Eligible response})}{(\text{Located Sample} - EINR)}.$$

Adjusted Response Rate

The adjusted response rate (ARR) is defined as

$$ARR = \frac{(\text{Eligible response})}{(\text{Eligible Sample} - IPNDR - EINR)}.$$

Weighted location, completion, and response rates by region for the 2008 LEO are shown in Table 11.

Table 11.
Rates for Full Sample and Stratification Levels

Domain	Sample Size	Usable Responses	Sum of Weights	Location Rate (%)	Completion Rate (%)	Response Rate (%)
Sample	2,598	1,376	7,886	81.3	67.8	55.1
Jurisdiction by registered voters						
All with 200,001–360,000	101	50	101	86.1	57.5	49.5
All with more than 360,000	79	34	79	81.0	53.1	43.0
County/City						
jurisdiction with registered voters						
100,001–200,000	120	59	146	88.3	55.7	49.2
75,001–100,000	77	37	109	92.2	52.1	48.1
40,001–75,000	194	95	279	87.1	56.2	49.0
10,001–40,000	702	364	1,263	86.9	59.7	51.9
5,001–10,000	336	174	624	88.7	58.4	51.8
Less than 5,001	335	194	791	87.1	66.7	58.1
Town/Township/Village						
jurisdiction with registered voters						
10,001–200,000	72	37	331	83.3	61.7	51.4
5,001–10,000	64	34	302	78.1	68.0	53.1
Less than 5,001	518	298	3,861	76.0	76.0	57.8

Edit and Imputation Processes

To calculate estimated totals from the survey data, edit and imputation processes were developed for the items with missing data. Without an edit and imputation process, the estimated totals will underrepresent the actual total. The edit process is the inspection of collected data, prior to statistical analysis. The goal of editing is to verify that the data have properties intended for the original design. An imputation process places an estimated answer into a data field for a record that previously had no data or had incorrect or implausible data.

Edit Process

There were two edits done prior to statistical analysis. The first edit was specific for Question 3, the total number of votes for the local jurisdiction. If the jurisdiction was an eligible respondent, then an edit was performed. When the total number of votes for the jurisdiction did not closely correspond to the expected number of votes used during the sample design, then there was a Web search to find the total number of votes for the jurisdiction through the FVAP Web site. Question 3 was used during the imputation process.

The second edit called the common denominator edit was used for questions with multiple parts or sub-items. The questions pertaining to count data had three sub-items.

- Military in the U.S.
- Military overseas (usually designated by an APO/FPO address)
- Civilians overseas

The common denominator edit was performed on all complete and incomplete eligible cases. When one or more sub-items had valid responses, the missing values for the remaining sub-items are set to zero.

Imputation Process

After the edit process, the imputation process started. The imputation process used the 11 sampling strata as the subgroups for the donors. To become a donor, the case needed to be a complete eligible case that had no missing data at the data item level. The imputation process generated recipients from the questions asking count data that had missing values for the three sub-items.

Using a simple random sample, a donor was found from the sampling stratum for each recipient in the same sampling stratum. No donor could be used more than one time. The donor provided a ratio. The ratio used the data item needing imputation by the recipient as the numerator and the total number of votes as the denominator. The ratio was multiplied to the total number of votes of the recipient case.

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